

VG/Flow rate adjusting valve

Piston check valve

Other valves for process gas

Overview

These related components are used for process gas supply and ancillary equipment.

Features

- Vacuum generator VG
 - Uses newly developed nozzle
 - Energy saving
 - Resistant to pressure fluctuation
- Flow rate adjusting valve
 - Two types available (Cv 0.03 and 0.2) preparation
- Piston check valve
 - Uses Kalrez[®] valve seats



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Vacuum generator for process gas exhaust

VG Series

● Nozzle diameter: $\varnothing 0.5$

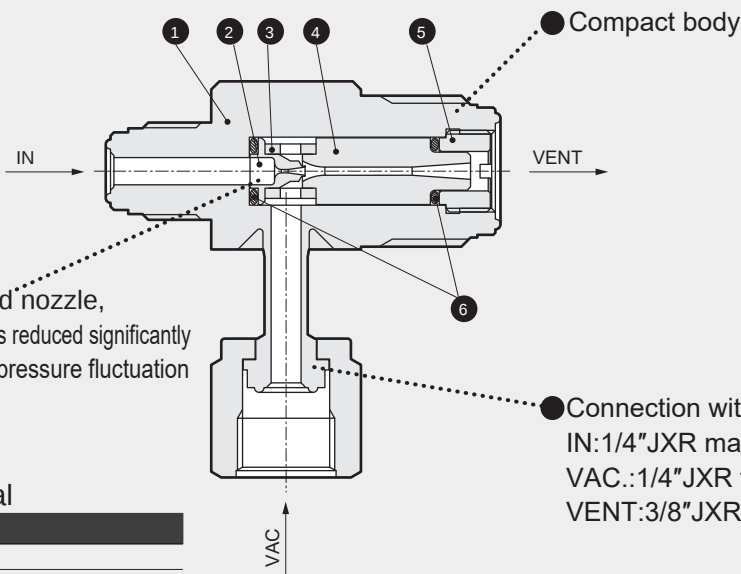
RoHS

Model No. O-ring material

VG-05F FKM

VG-05P Kalrez®

Energy saving vacuum exhaust equipment



- Using a newly developed nozzle,
 1. Consumption of supply fluid is reduced significantly
 2. Resistant to primary side pressure fluctuation (Patented)

● Connection with JXR fitting *1
 IN: 1/4" JXR male fitting
 VAC.: 1/4" JXR female fitting
 VENT: 3/8" JXR male fitting

Gas contacting parts material

Part No.	Part name	Material
1	Body	SUS316L
2	Nozzle	SUS316L
3	Spacer	SUS316L
4	Diffuser	SUS316L
5	Diffuser retainer	SUS316L
6	O-ring	FKM or Kalrez®

* The 1/4" JXR fitting can be connected to the VCR fitting.

Specifications

Item	VG
Working fluid	Inert gas/process gas
Fluid temperature °C	0 to 80
Supply fluid	Nitrogen, dry air
Supply fluid pressure MPa	0.4 to 0.6 (operating)
Supply fluid consumption L/min (ANR)	16 or less *1
Achieved vacuum level kPa (abs)	13.3 or less
Discharge rate L/min (ANR)	6 or more *1 *2
External leakage Pa·m³/s (He)	2.8 x 10 ⁻¹² or less
Proof pressure MPa	3
Ambient temperature °C	0 to 80
Connection	IN: 1/4" JXR male fitting (can be connected to VCR fitting) VAC.: 1/4" JXR female fitting (can be connected to VCR fitting) VENT: 3/8" JXR male fitting (can be connected to VCR fitting)
Weight kg	0.2

*1: 0.5MPa pressurized (operating)

*2: Working fluid is air



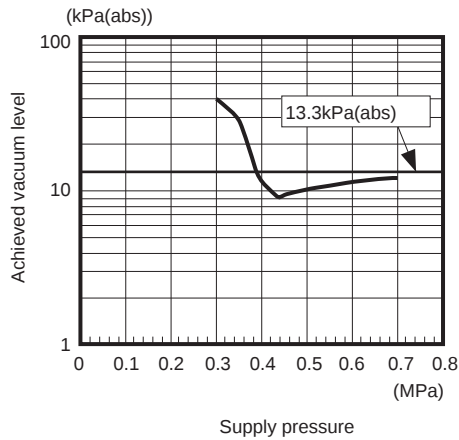
Safety precautions

Read the Safety Precautions on Intro Page 9 and pages 84 to 85 to ensure correct and safe use of the product.

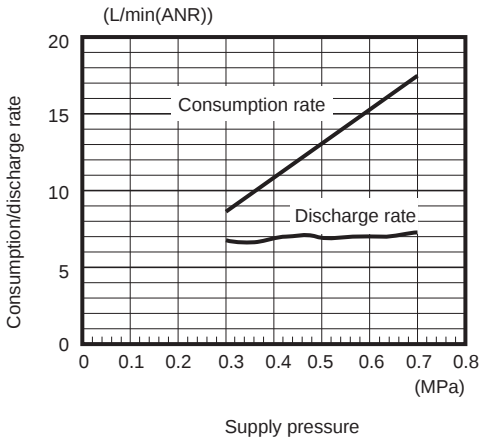
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Characteristic curve

● Achieved vacuum level



● Supply fluid consumption/discharge rate



*According to CKD test data

Note: Achieved vacuum level with the characteristics described above produces abnormal noise (soft clicking sound) at supply pressure (around 0.4 MPa) just before reaching the peak value. When this abnormal noise occurs, the characteristics become unstable and operation becomes louder. Increase the supply pressure within the specification range, as it may affect the sensor, etc., and cause trouble.

How to order

VG - **05** **F**

Model No.

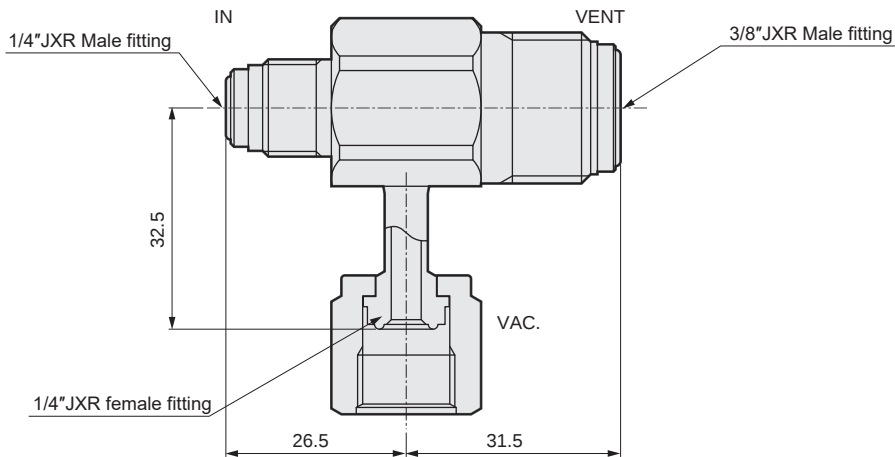
A Nozzle diameter [mm]

B O-ring material

Code	Description
A Nozzle diameter [mm]	
05	ø0.5
B O-ring material	
F	FKM
P	Kalrez®

Dimensions

● VG-05*



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Flow rate adjusting valve Piston check valve

RoHS

Made-to-order product

● Flow rate adjusting valve



■ Changes up to max. Cv with about 10 turns of the handle.

Specifications

Item	Cv (max) 0.03 type	Cv (max) 0.2 type
Working fluid	Inert gas/process gas	
Working pressure Pa(abs)-MPa(G)	1.3×10^{-6} to 0.7	
Fluid temperature °C	-10 to 80	
Ambient temperature °C	-10 to 80	
Valve seat leakage Pa·m ³ /s(He)	1/100 or less of max. Cv	
External leakage Pa·m ³ /s(He)	2.8×10^{-12} or less	
Cv (adjusting range)	0.003 to 0.03	0.02 to 0.2
Connection Note	1/4" JXR male fitting 1/4" JXR female fitting 1/4" double barbed fitting	

Note: JXR fitting can be connected to VCR fitting.

● Piston check valve



■ Valve seat material uses Kalrez®.

Specifications

Item	
Working fluid	Inert gas/process gas
Working pressure Pa(abs)-MPa(G)	1.3×10^{-6} to 0.7
Fluid temperature °C	-10 to 80
Ambient temperature °C	-10 to 80
Valve seat leakage Pa·m ³ /s(He)	4.7×10^{-9} or less
External leakage Pa·m ³ /s(He)	2.8×10^{-12} or less
Cv (max.)	0.25
Cracking pressure	2.3 kPa
Connection Note	1/4" JXR male fitting 1/4" JXR female fitting 1/4" double barbed fitting

Note: JXR fitting can be connected to VCR fitting.

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